

# Construct Spectrum and SDK

## Version 4.5.1 Release Notes

## **Manual Order Number: SPE451-008IBW**

This document applies to Construct Spectrum and SDK Version 4.5.1 and to all subsequent releases.

Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

Readers' comments are welcomed. Comments may be addressed to the Documentation Department at the address on the back cover or to the following e-mail address:

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## PREFACE

These release notes describe the changes to Construct Spectrum provided in version 4.5.1.

For information about **Construct Spectrum**, see:

- *Construct Spectrum Reference*  
This documentation is for application developers and administrators who need quick access to information about Construct Spectrum application programming interfaces (APIs) and utilities.
- *Construct Spectrum Administration*  
This guide is for administrators who want to use the Construct Spectrum Administration subsystem to set up and manage Construct Spectrum applications.
- *Construct Spectrum and SDK Installation Guide for Windows*  
This documentation describes how to install and set up the Construct Spectrum runtime and SDK components on the client.
- *Construct Spectrum and SDK Installation Guide for Mainframes*  
This documentation describes how to install and set up the Construct Spectrum runtime and SDK components on the mainframe.

For information about the **Construct Spectrum SDKs**, see:

- *Construct Spectrum SDK Reference*  
This documentation is for developers creating Natural modules and ActiveX Business Objects to support applications that will run in the Natural mainframe environment and a Windows environment and/or an internet server.
- *Construct Spectrum SDK for Microsoft .NET Framework*  
This guide is for developers creating Microsoft .NET Web services to invoke Natural subprograms (business objects) over the Inter/Intranet via the W3C SOAP standard.
- *Construct Spectrum SDK for Web Applications*  
This documentation is for developers creating the web components of applications. It describes how to use the Construct Spectrum wizards in Visual Basic to generate HTML templates, page handlers, and object factory entries. It also contains detailed information about customizing, debugging, deploying, and securing web applications.
- *Construct Spectrum SDK for Client/Server Applications*  
This documentation is for developers creating client components for applications that will run in a Natural mainframe (server) and Windows (client) environment.
- *Construct Spectrum Messages*  
This documentation is for application developers, application administrators, and system administrators who want to investigate messages returned by Construct Spectrum runtime and SDK components.

For information about **Natural Construct**, see:

- *Natural Construct Installation Guide for Mainframes*  
This documentation provides essential information for setting up the latest version of Natural Construct, which is needed to operate the Construct Spectrum programming environment.
- *Natural Construct Generation*  
This documentation describes how to use the Natural Construct models to generate applications that will run in a mainframe environment.
- *Natural Construct Administration and Modeling*  
This documentation describes how to use the Administration subsystem of Natural Construct and how to create new models.
- *Natural Construct Help Text*  
This documentation describes how to create online help for applications that run on server platforms.
- *Natural Construct Getting Started Guide*  
This guide introduces new users to Natural Construct and provides step-by-step instructions to create several common processes.

# WHAT'S NEW IN V4.5.1

This document contains information not contained in previous Construct Spectrum documentation. It describes the support requirements and changes in this release of Construct Spectrum.

The following topics are covered:

- **Product Compatibility**, page 8
- **Important Notices**, page 8
- **New Features**, page 9
- **Enhancements**, page 10
- **Known Problems**, page 12

## Product Compatibility

For information on product prerequisites for the mainframe, see **Prerequisites**, page 14, *Construct Spectrum and SDK Installation Guide for Mainframes*.

For information on product prerequisites for the client, see **Prerequisites**, page 12, *Construct Spectrum and SDK Installation Guide for Windows*.

## Important Notices

This section contains important information about this release of Construct Spectrum.

### Ending Support for the Construct Windows Interface

The Construct Windows interface for Construct Spectrum is supported in this release, but will no longer be available or supported in the next release of Construct Spectrum. The upcoming release of Natural V6.1.1 for Windows will include the Construct plugin for Single Point of Development (SPoD).

### Generating the FORMER Action for a Subprogram Proxy

When you use the Subprogram-Proxy model to generate a proxy for a Natural subprogram, the FORMER action is not automatically entered in the LFILE. To use this action, you must manually enter the action in the LFILE in the Construct Spectrum Administration subsystem.

When you use the Web Service wizard to generate Web services for a Natural subprogram, the FORMER action is included if it is in the LFILE — but the input/output PDAs are not automatically selected. Manually select them as you would for a NEXT action.



## New Features

This section contains details about the new features provided in this release.

### New SDK for Microsoft .NET

Construct Spectrum now has a software development kit (SDK) for the Microsoft .NET platform. The SDK generates Web services for Natural subprograms and provides an application framework and generation tools for creating HTML applications based on this framework.

Unlike other Construct Spectrum SDK's, this SDK does not generate source code. Instead, it generates XML documents that are handled by a runtime component called the Spectrum Web Service Runtime. This .NET component runs under ASP.NET and a special HTTP handler that intercepts requests containing a .SWS extension and passes them to the runtime component for execution.

You can customize the generated Web services by writing and registering events using a .NET language (for example, VB.NET or C#). For more information, see *Construct Spectrum SDK for Microsoft .NET Framework*.

### Browser Requirements for the Web Application Builder

Web applications created using the Web Application Builder make direct calls to the XML and XSL features of the Microsoft XML parser. These applications require Internet Explorer 5.0 or higher.

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**Note:** Depending on the security settings for your browser, you may need to add the site that is hosting your application as a trusted site. To do this, select Tools > Internet Options > Security tab from Internet Explorer.

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### Version Compatibility with the .NET Framework

Although the .NET components included in this release were compiled under the 1.0 release of the .NET framework, they are also compatible with the 1.1 release.

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**Note:** If you have both frameworks installed, the Spectrum Web Service Runtime component will run under version 1.1.

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## Enhancements

This section describes enhancements in this release.

### New Functionality for the Configuration Editor

New functionality was added to the Configuration editor for the Construct Spectrum SDK for Microsoft .NET framework. This software development kit (SDK) supplies the Spectrum Web Services wizard and the Application Builder, which includes the Menu wizard and Web Page wizard for SWS (Spectrum Web Services).

### Construct Spectrum Now Available in the SYSPROD Utility

Construct Spectrum is now listed in the Natural SYSPROD utility. Use this utility to determine which version of Construct Spectrum is currently installed.

### New Objects in the Demo Application

Two new objects were added to the SPEDEMO demo application. If you are upgrading Construct Spectrum, we recommend that you do one of the following:

- Run SPIDATA and select the Appl Service option. This enters the new objects into the Construct Spectrum metadata.
- or
- Run NCSTBGEN and select all objects. This performs a batch generation on SPECDEMO and ensures that the Spectrum metadata accurately represents your environment.

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**Note:** If you are installing Construct Spectrum for the first time, SPIDATA populates the Construct Spectrum metadata.

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The first new object is called Golden Customer and has a subprogram proxy called CGOLDP. This object is similar to CU2-MSO (Customer2) except it has an additional parameter — a derived logical that is set if the customer has a credit limit greater than \$10,000. This new object demonstrates the checkbox option on the generated web page. It also includes the FORMER action, which was renamed “Previous” on the web page.

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**Note:** The current demo application does not include the FORMER action (introduced in version 4.4.1). To include this action, regenerate SPECDEMO using NCSTBGEN.

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**Note:** To show the FORMER action on the client, clear the Spectrum cache and generate a new Web service for the subprogram.

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The second new object is a Natural subprogram called BTCHJBS that was not generated using Natural Construct; it has a subprogram proxy called BTCHJBSP. Typically, only the DEFAULT action is included when you generate a subprogram proxy for a non-Construct generated subprogram. For this new object, however, we added the maintenance actions. Once everything is generated, however, any action selected on the web page will perform the default action (execute the subprogram).

To change the functionality of these actions, you can assign overrides using the Web Service wizard. In a Natural Construct-generated maintenance subprogram, for example, the GET method has an override of CDAOBJ2.#FUNCTION with the value "GET". This means the #FUNCTION variable is assigned the value GET so the subprogram on the backend can process the code based on this value.

Since the BTCHJBS subprogram does not maintain data, code is not modified when the UPDATE action is selected. In addition, the BTCHJBSP subprogram proxy does not contain overrides to make the actions unique.

## **Web Service Customizations for the BTCHJBSP Object**

Although no Web service changes were made to the BTCHJBSP object, some simple changes in the Web Service wizard made this web page even more powerful. For example, even though you can identify the input and output PDA based on naming conventions, the Web Application Builder does not make this assumption. Therefore, all PDAs and data are generated into the SOAP message.

Since the GET method (renamed "Retrieve") is used on the web page, the BTCHJBSP PDA specified in the Web Service wizard was deselected at input. The PDA is passed back to the mainframe empty (even if there is data in it), which refreshes the array on the web page and allows the input data in BTCHJBSP to retrieve different data.

Another change made to this object was to add zero suppression to the Region and Job Number by adding ZERO=OFF to the BDT Modifier in the Web Service wizard.

## Known Problems

This section identifies known problems in this release.

### Server Errors when Regenerating or Modifying Web Services

If you regenerate or customize a generated Web service and receive time-out errors from IIS (Internet Information Server) or a Server Unavailable error from .NET, upgrade to Microsoft .NET Framework version 1.1.

### Regeneration Changes not Accessible to Users

If you make changes to a generated Web service and do not change the Web.config file, the updates will not be accessible to users invoking your service. To make the changes accessible, do one of the following:

- Recycle IIS (Internet Information Server)
- Unload the Root application
- Re-save the Web.config file

### Web Application Builder Error

You may receive the following error from a generated application:

`A serious error has occurred; Contact Administrator`

This error occurs when there is no response XML. The most likely cause is that the Services folder in IIS (Internet Information Server) has not been defined as an application.

- To correct this problem:
- 1 Invoke IIS administration.
  - 2 Right-click the Services directory.
  - 3 Select Properties.
  - 4 Click Create.

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**Note:** You can also use the SOAP Client to see if a different (non XML) error is being returned from IIS.

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## Installation Error

During installation on platforms that do not have IIS (Internet Information Server) installed, you may receive the following error message:

Unknown Error 1933

You are given the option to Abort, Retry, or Ignore. Click Ignore and the installation will continue normally.

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**Note:** This error is due to a problem with the current installer version and will be corrected in the next release of Construct Spectrum.

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## JavaScript Error

Using applications created using the Web Application Builder, you may receive the following error message:

Automation server can't create object

Possible reasons include:

Reason	Solution
The browser's security mode is preventing ActiveX scripting.	Change the Initialize and script ActiveX controls not marked as safe setting in the Internet Explorer security settings.
	<b>Note:</b> We recommend that you change this setting in the Trusted Sites zone and add the URL to the site list.
The client is running Internet Explorer 5.5 or earlier and MSXML 2.0 or higher is not installed.	Have your clients download MSXML 3.0 from Microsoft (see <a href="http://www.microsoft.com/xml">http://www.microsoft.com/xml</a> ) or upgrade to Internet Explorer 6.0, which includes version 3.0.
	<b>Note:</b> Downloading MSXML 4.0 will not work, as it is not backward compatible. Clients running MSXML 4.0 must also download version 3.0.

